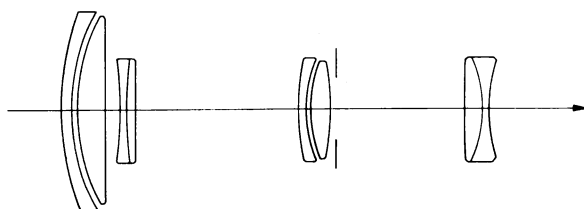


MINOLTA AF ZOOM 100-200mm F4.5 (22) (2560-100)

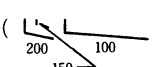
MINOLTA MAXXUM AF ZOOM 100-200mm F4.5 (22) (2560-600)

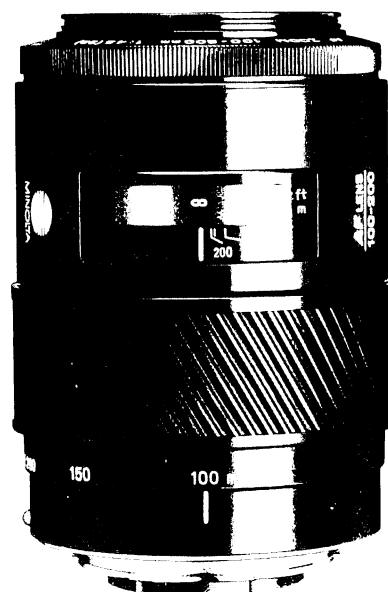
LENS



Construction : 8 elements in 7 groups
Type : 4-component mechanical-compensation zoom lens
Coating : Minolta Achromatic
Angle of view : $24^{\circ} \sim 12^{\circ}30'$
Lens mount : Minolta A mount
Lens signal contact : 5 contacts
Diaphragm : Automatic preset diaphragm
f No. : Maximum.....4.5
Minimum.....22
Full-stop setting...4.5 stops
Diaphragm blade : 7 blades

FOCUSING

Focusing : AF · FA · M
Type : Front-component focusing
Minimum focusing distance : 1.9m
Distance scale : $\frac{7 \ 8 \ 10 \ 15 \ 30}{1.9 \ 2.5 \ 3 \ 4 \ 5 \ 7 \ 15} \begin{matrix} \text{(ft)} \\ \text{(m)} \end{matrix}$
Infrared correction scale : YES ()



ZOOMING

Type : Mechanical-compensation zoom lens, Rotary 2-ring
Zooming scale : f 200 150 100mm
Zooming ratio : $2\times$

DIMENSIONS & WEIGHT

Dimensions : $\phi 69.5$ (max. diameter) \times
 $\phi 94.5$ mm (max. length)
Weight : 395 g
Filter-thread diameter : $\phi 49$ mm (P=0.75)
Lens hood diameter : $\phi 49$ mm (clip-on)

ACCESSORIES

Lens case (LH-1034)
Lens hood (6560-810)

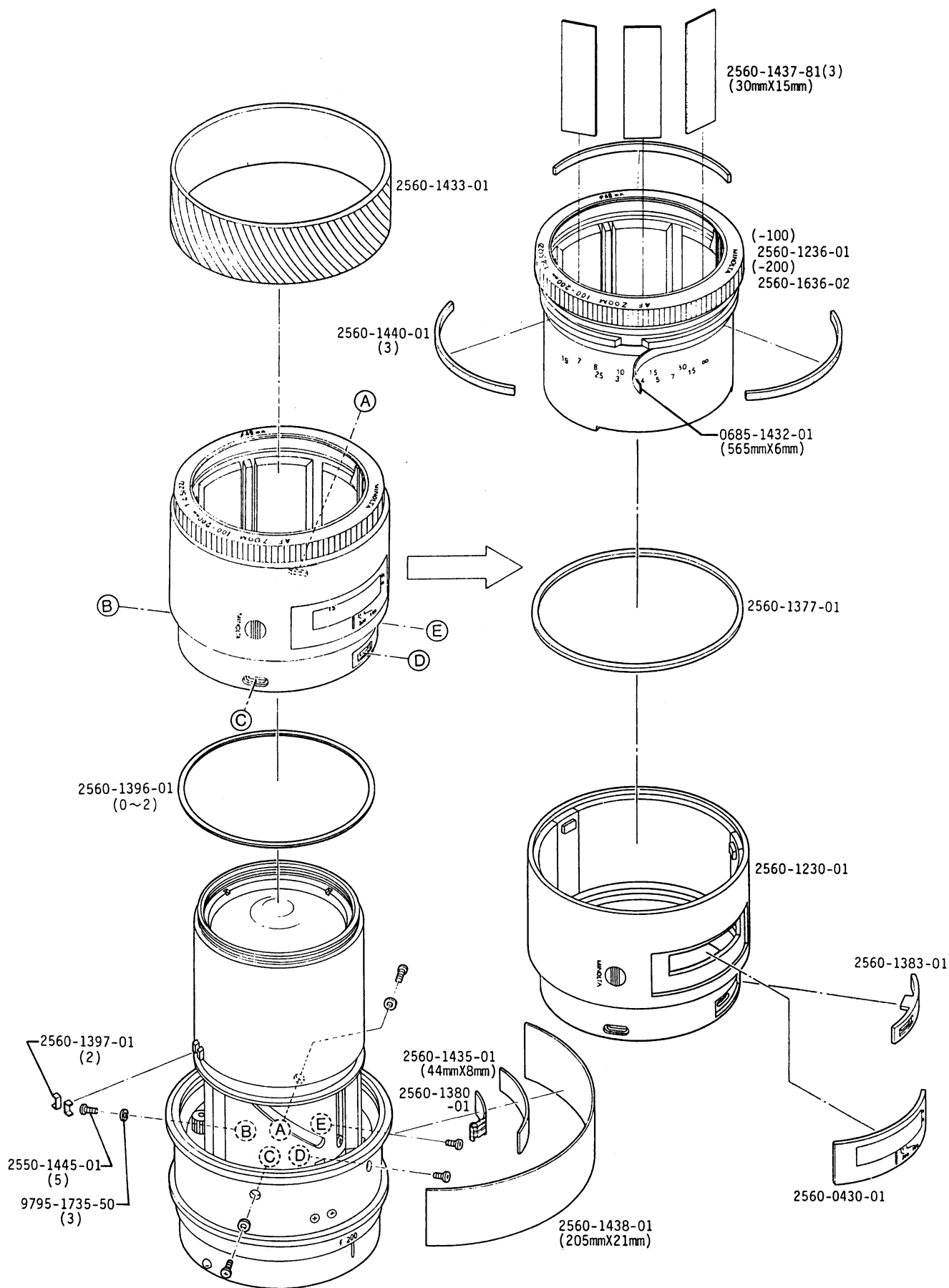
I N D E X

Part No.	Page	Part No.	Page	Part No.	Page
2560-0101-----5		2560-1387-----3		2560-1456-----2	
2560-0103-----5		2560-1388-----3		2560-1457-----2	
2560-0104-----5		2560-1389-----3		2560-1458-----2	
2560-0107-----5		2560-1390-----3		2560-1459-----2	
2560-0108-----3		2560-1391-----2		2560-1470-----4	
2560-0232-----2,4		2560-1396-----1		2560-1471-----4	
2560-0240-----3		2560-1397-----1		2560-1472-----4	
2560-0371-----4				2560-1473-----4	
2560-0411-----4		2560-1402-----3		2560-1474-----4	
2560-0430-----1		2560-1409-----4		2560-1475-----4	
		2560-1420-----3		2560-1476-----4	
2560-1102-----5		2560-1422-----4		2560-1477-----4	
2560-1110-----4		2560-1424-----3		2560-1478-----4	
2560-1112-----4		0685-1432-----1		2560-1479-----4	
2560-1113-----4		2560-1433-----1			
2560-1230-----1		2560-1435-----1		2560-1501-----4	
2560-1231-----4		2560-1436-----2		2555-1502-----4	
2560-1236-----1		2560-1437-----1		2560-1503-----4	
2560-1237-----4		2560-1438-----1		2560-1636-----1	
2560-1242-----3		2560-1439-----4		2560-1801-----5	
2560-1351-----2		2560-1440-----1			
2560-1372-----3		2560-1441-----4		9611-1422-07----3	
2560-1374-----3		2551-1444-----4		9611-1620-07----4	
2560-1377-----1		2550-1445-----1		9611-2040-04----3	
2560-1380-----1		2550-1446-----3		9612-1645-07----4	
2560-1382-----4		2560-1451-----2		9613-1640-07----4	
2560-1383-----1		2560-1452-----2		9761-1745-07----3	
2560-1384-----4		2560-1453-----2		9761-1765-07----2	
2560-1385-----3		2560-1454-----2		9763-1740-07----3	
2560-1386-----3		2560-1455-----2		9795-1735-50----1	

1

AF ZOOM 100~200mm F4.5(22)
MAXXUM AF ZOOM 100~200mm F4.5(22)

Code No.2560-100
Code No.2560-600

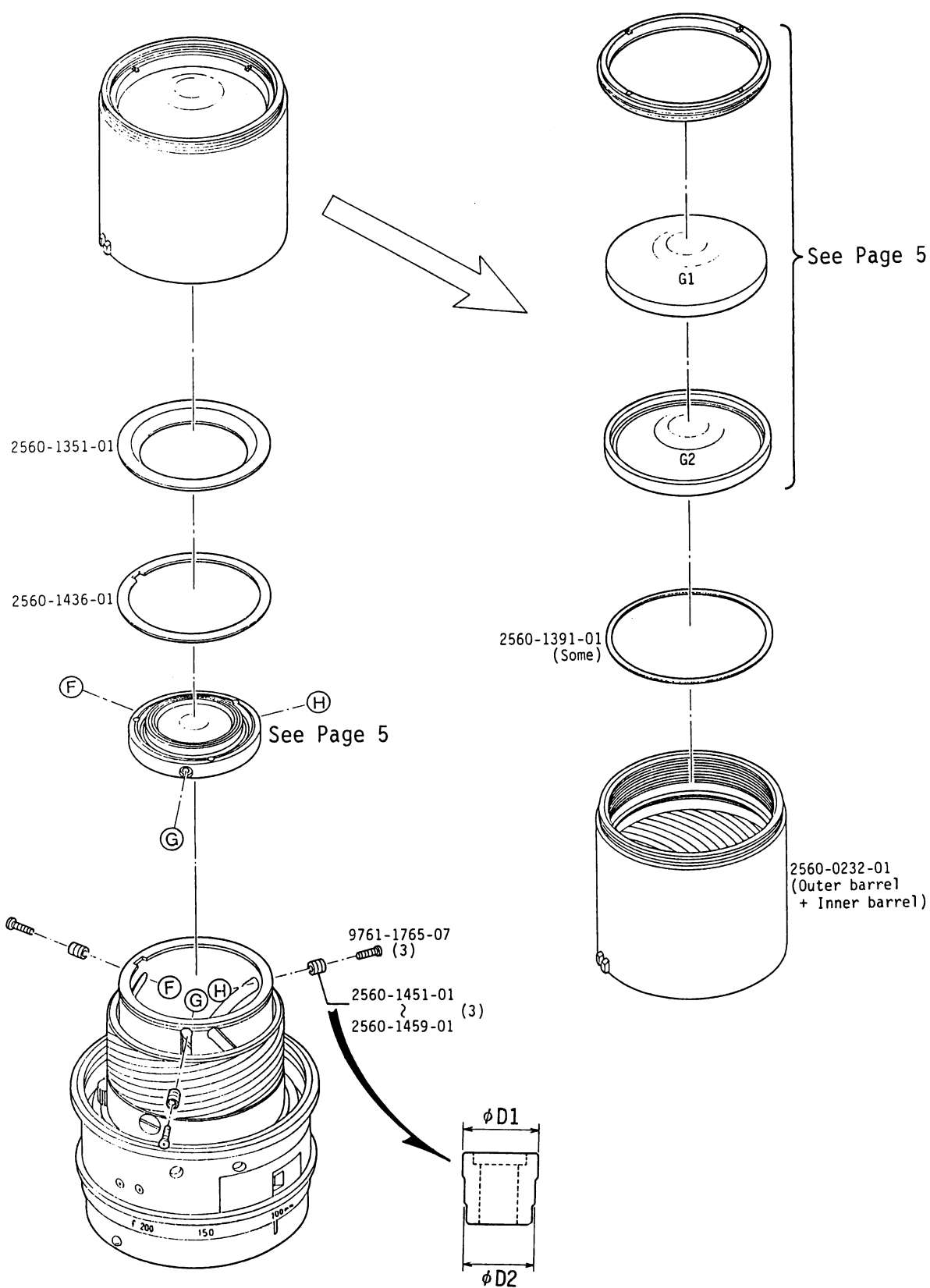


Part No.	Part Name		Qty.
2560-0430-01	Distance scale window set	距離目盛窓セット	1
2560-1230-01	Outer ring	固定保持環	1
2560-1236-01	Focusing ring (-100)	距離リング	1
2560-1377-01	Ring	補強リング	1
2560-1380-01	Brush	ブラシ	1
2560-1383-01	Focus stopper	フォーカスストッパー	1
2560-1396-01	Washer	ガタ止めワッシャー	0~2
2560-1397-01	Plate	ガタ止め板	2
0685-1432-01	Tape (Per roll)	テープ	1
2560-1433-01	Rubber ring	ゴムリング	1
2560-1435-01	Tape (Per roll)	テープ	1
2560-1437-81	Tape (Per roll)	テープ	3
2560-1438-01	Tape	テープ	1
2560-1440-01	Friction tape	摩擦布	3
2550-1445-01	Screw	止めねじ	5
2560-1636-02	Focusing ring (-600)	距離リング	1
9795-1735-50	Washer	薄ワッシャー	3

2

AF ZOOM 100~200mm F4.5(22)
 MAXXUM AF ZOOM 100~200mm F4.5(22)

Code No.2560-100
 Code No.2560-600



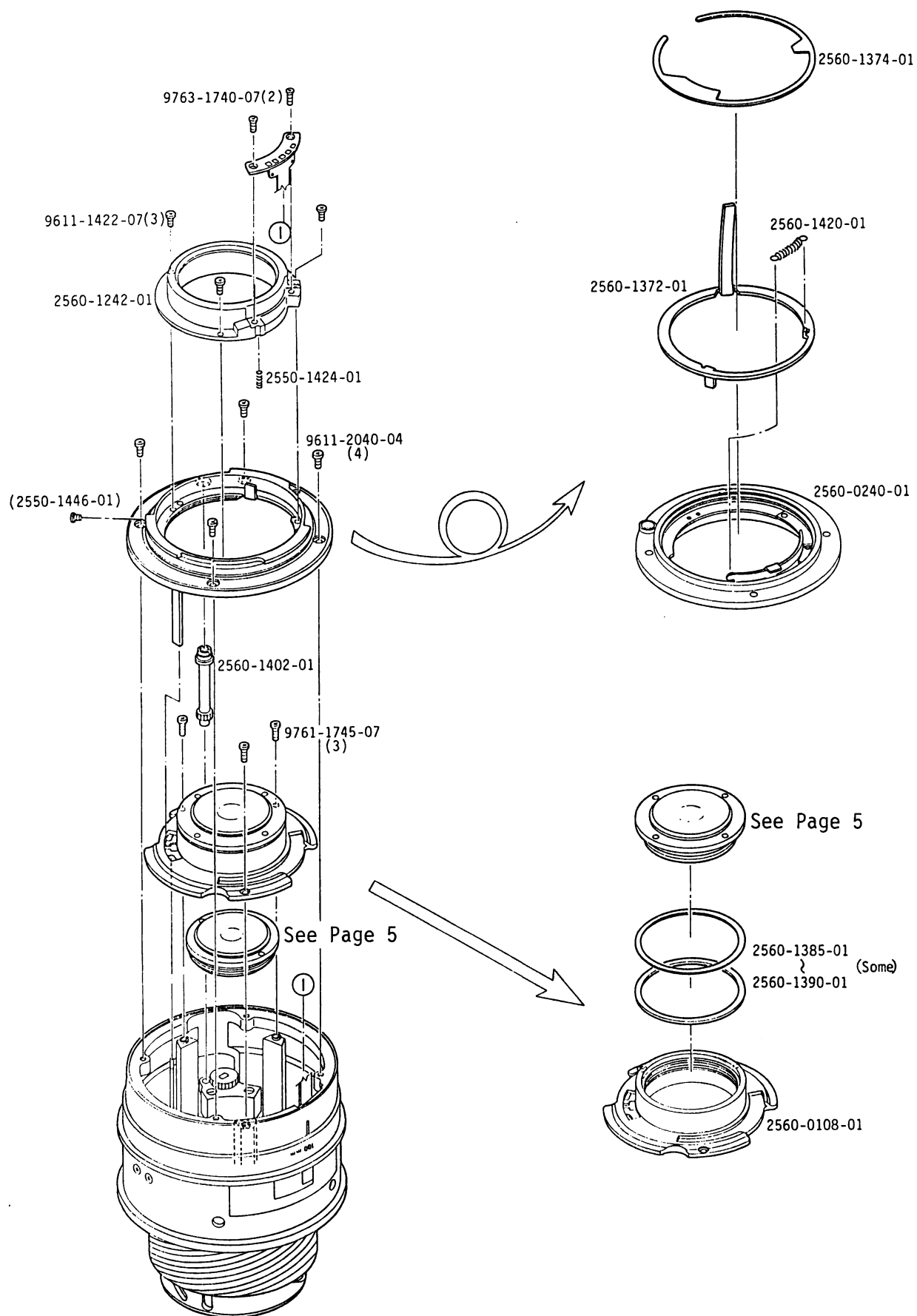
AF ZOOM 100~200mm F4.5(22) Code No.2560-100
 MAXXUM AF ZOOM 100~200mm F4.5(22) Code No.2560-600

Part No.	Part Name		Qty.
2560-0232-01	Helicoid set	ヘリコイドセット	1
2560-1351-01	Light shield plate	遮光板	1
2560-1391-01	Adjusting washer	像点移動調整ワッシャー	Some
2560-1436-01	Tape	テープ	1
2560-1451-01	2nd.guide roller-A(D1=φ3.63,D2=φ3.53)	第2案内ローラーA	3
2560-1452-01	2nd.guide roller-B(D1=φ3.63,D2=φ3.52)	第2案内ローラーB	
2560-1453-01	2nd.guide roller-C(D1=φ3.63,D2=φ3.51)	第2案内ローラーC	
2560-1454-01	2nd.guide roller-D(D1=φ3.62,D2=φ3.53)	第2案内ローラーD	
2560-1455-01	2nd.guide roller-E(D1=φ3.62,D2=φ3.52)	第2案内ローラーE	
2560-1456-01	2nd.guide roller-F(D1=φ3.62,D2=φ3.51)	第2案内ローラーF	
2560-1457-01	2nd.guide roller-G(D1=φ3.61,D2=φ3.53)	第2案内ローラーG	
2560-1458-01	2nd.guide roller-H(D1=φ3.61,D2=φ3.52)	第2案内ローラーH	
2560-1459-01	2nd.guide roller-I(D1=φ3.61,D2=φ3.51)	第2案内ローラーI	
9761-1765-07	Tap tite screw	十字穴付タップタイトねじ	3

3

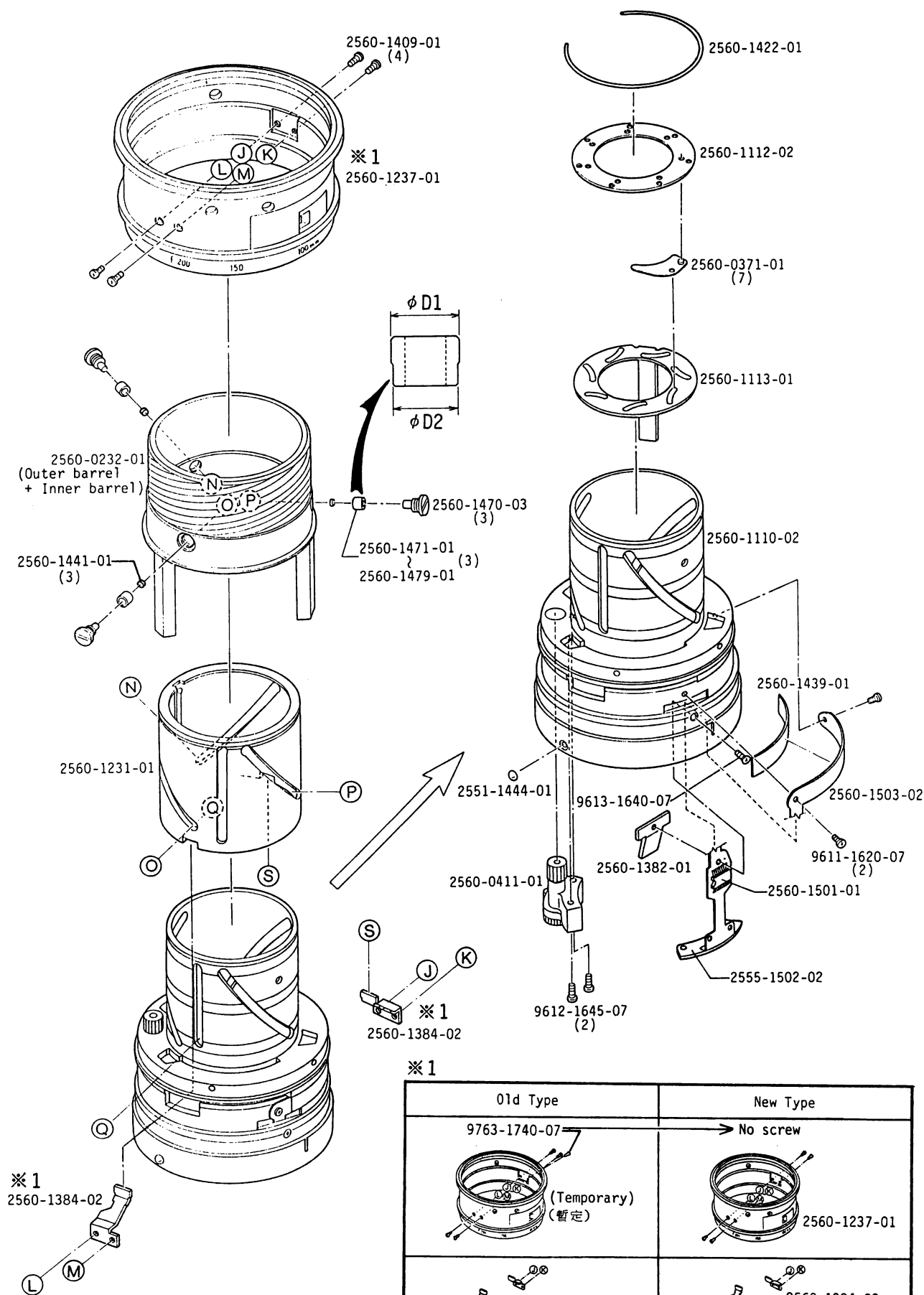
AF ZOOM 100~200mm F4.5(22)
MAXXUM AF ZOOM 100~200mm F4.5(22)

Code No.2560-100
Code No.2560-600



AF ZOOM 100~200mm F4.5(22) Code No.2560-100
 MAXXUM AF ZOOM 100~200mm F4.5(22) Code No.2560-600

Part No.	Part Name		Qty.
2560-0108-01	4th. moving barrel set	第4群移動枠セット	1
2560-0240-01	Bayonet mount set	バヨネットマウントセット	1
(2550-1446-01)	Screw	ストッパービス	1
2560-1242-01	Light shield ring	遮光筒	1
2560-1372-01	Preset ring	プリセットリング	1
2560-1374-01	Preset ring pressure	プリセットリング押え	1
2560-1385-01	Back washer-A(t=0.05)	バックワッシャーA	} Some
2560-1386-01	Back washer-B(t=0.08)	バックワッシャーB	
2560-1387-01	Back washer-C(t=0.1)	バックワッシャーC	
2560-1388-01	Back washer-D(t=0.2)	バックワッシャーD	
2560-1389-01	Back washer-E(t=0.5)	バックワッシャーE	
2560-1390-01	Back washer-F(t=0.7)	バックワッシャーF	
2560-1402-01	Coupler	カプラー	1
2560-1420-01	Main spring	メインスプリング	1
2550-1424-01	Spring	アーススプリング	1
9611-1422-07	Phillips type screw	十字穴付なべ小ねじ	3
9611-2040-04	Phillips type screw	十字穴付なべ小ねじ	4
9761-1745-07	Tap tite screw	十字穴付タップタイトねじ	3
9763-1740-07	Tap tite screw	十字穴付タップタイトねじ	2



※1

Old Type	New Type
9763-1740-07 (Temporary) (暫定)	No screw 2560-1237-01
 2560-1384-02	 2560-1384-02

Only new type is supplied as servicing parts.
 Since 1237 and 1384 are related-parts, replace them as a set.
 サービス供給パーツは New Typeのみです。
 Old Typeの1237と1384は関連変更ですのでセットで交換して下さい。

Part No.	Part Name		Qty.
2560-0232-01	Helicoid set	ヘリコイドセット	1
2560-0371-01	Diaphragm blade set	絞り羽根セット	7
2560-0411-01	Gear set	ギヤーセット	1
2560-1110-02	Fixed barrel	固定筒	1
2560-1112-02	Diaphragm pressure ring	絞り押え環	1
2560-1113-01	Diaphragm operation plate	絞り操作板	1
2560-1231-01	Zoom cam barrel	ズームカム環	1
2560-1237-01	Zoom ring	ズームリング	1
2560-1382-01	Holding plate	フレキ固定板	1
2560-1384-02	Zoom connecting lever	ズーム連動レバー	2
2560-1409-01	Screw	止めねじ	4
2560-1422-01	Diaphragm pressure ring spring	絞り押え環スプリング	1
2560-1439-01	Tape	テープ	1
2560-1441-01	Rubber	ガタ止めゴム	3
2551-1444-01	Bayonet point	バヨネット標点	1
2560-1470-03	Guide pin	案内ピン	3
2560-1471-01	1st.guide roller-A(D1=φ3.63,D2=φ3.58)	第1案内ローラーA	3
2560-1472-01	1st.guide roller-B(D1=φ3.63,D2=φ3.57)	第1案内ローラーB	
2560-1473-01	1st.guide roller-C(D1=φ3.63,D2=φ3.56)	第1案内ローラーC	
2560-1474-01	1st.guide roller-D(D1=φ3.62,D2=φ3.58)	第1案内ローラーD	
2560-1475-01	1st.guide roller-E(D1=φ3.62,D2=φ3.57)	第1案内ローラーE	
2560-1476-01	1st.guide roller-F(D1=φ3.62,D2=φ3.56)	第1案内ローラーF	
2560-1477-01	1st.guide roller-G(D1=φ3.61,D2=φ3.58)	第1案内ローラーG	
2560-1478-01	1st.guide roller-H(D1=φ3.61,D2=φ3.57)	第1案内ローラーH	
2560-1479-01	1st.guide roller-I(D1=φ3.61,D2=φ3.56)	第1案内ローラーI	
2560-1501-01	IC (TOSHIBA,ML00F)	I C	1
2555-1502-02	Lens contact board	信号基板	1
2560-1503-02	Frexible PC board	フレキシブル基板	1
9611-1620-07	Phillips type screw	十字穴付なべ小ねじ	2
9612-1645-07	Phillips type screw	十字穴付なべ小ねじ	2
9613-1640-07	Phillips type screw	十字穴付半丸小ねじ	1

■ When repairing following parts, must be checked resolving power by projection.

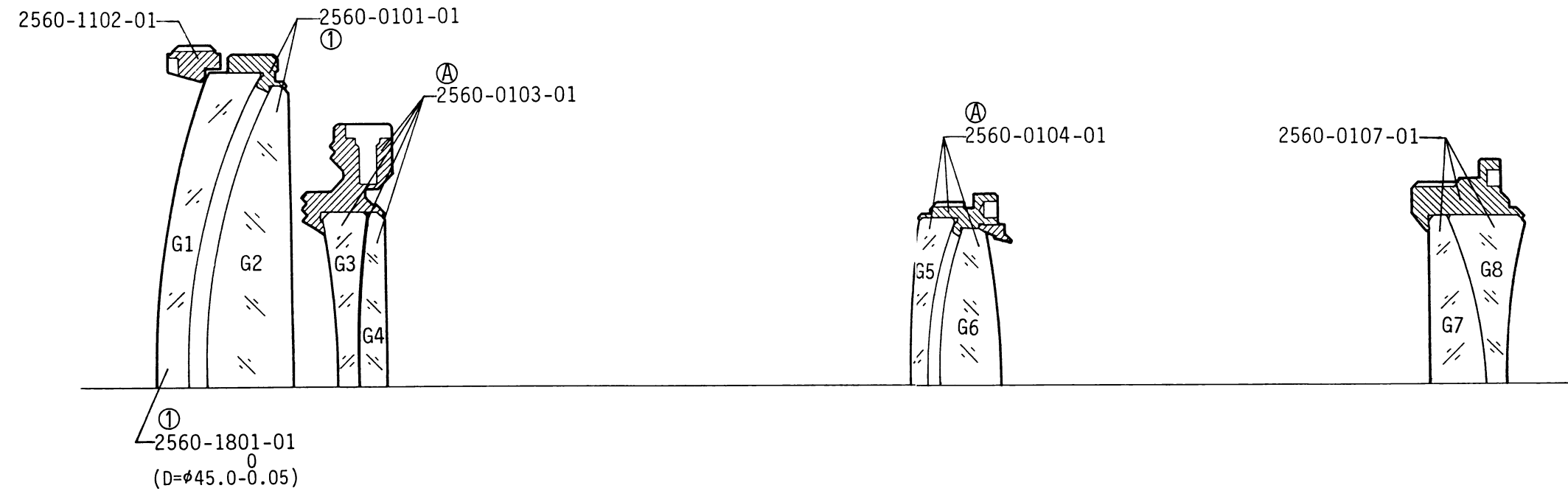
①: The influential lens element in the lens performance. (Number shows in order.)

Ⓐ: The influential lens group in the lens performance. (Influence: In alphabetical order)

■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

①: レンズ性能によく影響するレンズ。(数字は順位を示す)

Ⓐ: レンズ性能によく影響するレンズ群。(影響度: アルファベット順)



Part No.	Part Name		Qty.
2560-0101-01	1st.lens barrel set	第1群玉棒セット	1
2560-0103-01	2nd.moving barrel set	第2移動棒セット	1
2560-0104-01	3rd.lens barrel set	第3群玉棒セット	1
2560-0107-01	4th.lens barrel set	第4群玉棒セット	1
2560-1102-01	G1 pressure ring	G1 押え	1
2560-1801-01	Lens-G1	レンズG1	1

REPAIR GUIDE

- The contents of this manual are in accordance with the assembling procedure. Therefore, follow the reverse procedure when disassembling.

—Description of marks used—

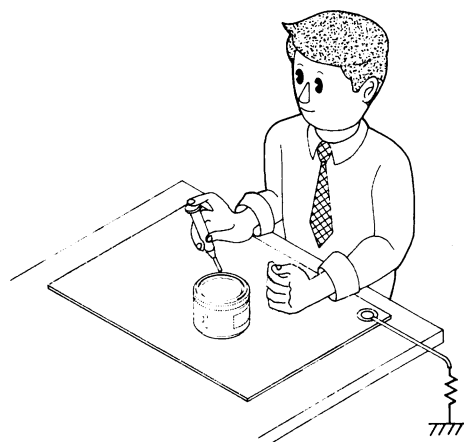
- **B** : Adhesive
- **S** : Solvent
- **A** : Anti-diffusion agent
- **G** : Grease
- **T** : Tool
- : Point of assembling and general caution

■ Assembling and adjusting procedure

	Page
① Fixed barrel, diaphragm blades, flexible PC board	p. 1
② Zoom cam barrel, Helicoid set, Zoom ring	p. 2
③ 3rd and 4th lens groups, Bayonet mount, Light shield ring	p. 3
■ Aperture diameter adjusting	p. 4
④ 1st and 2nd lens groups	p. 5
■ Helicoid position, level adjusting	p. 6
⑤ Outer ring, Focusing ring, Rubber ring	p. 7
■ Focus shift/flange back (f' F) adjustments	
1. Minute adjusting	p. 8
2. Rough adjusting	p. 9
■ Table for using washers	p. 9
■ Aperture diameter checking	p. 10
■ Projection resolving power checking, lens ROM signal checking	p. 10
■ Description of focusing and zooming	p. 11
■ Substantial circuit diagram and printed wiring diagram	p. 12

■ Precautions

- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
 - Use Fronsolve or alcol when cleaning. Never use the thinner, ketone or ether.
- Since MOS-IC is used in this lens, it is necessary to take special precautions about static electricity. When performing repairs, use the conductive mat without fail, as shown.



1 Fixed barrel, Diaphragm blades, Flexible PC board

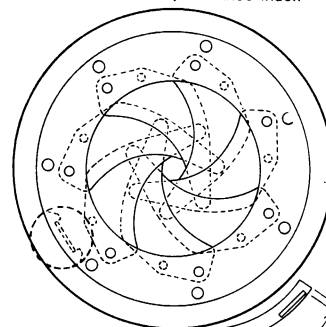
■ Assemble the parts in the order of ①-③.

■ B-10

Apply bond when assembling...after adjusting aperture diameter (see p. 4).

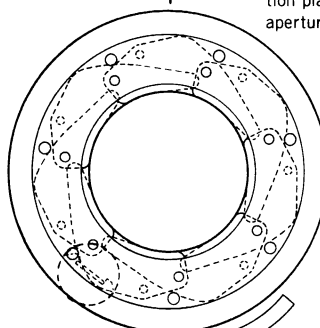
■ Temporary aperture-diameter adjusting (See p. 4 for full adjusting.)

Distance index



Reverse side

(Stop position of bar of diaphragm operation plate at minimum aperture side)



Reverse side

(Stop position of bar of diaphragm operation plate at maximum aperture side)

• Rotate diaphragm operation plate or diaphragm pressure ring for equalizing A with B.

Diaphragm pressure ring

①

Diaphragm blade (× 7)

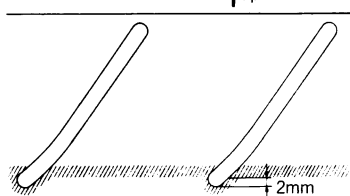
Diaphragm operation plate

a side

Fixed barrel

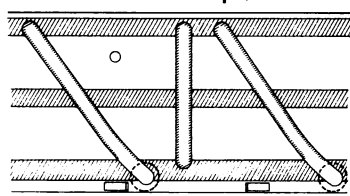
Tape

Inside ↑ up



■ A-10 (on entire surface of marked part)

Outside ↑ up



■ G-40 (thinly on entire surface of marked part)
※ Do not apply grease on circled part of grooves.

■ B-20

Bayonet point

Holding plate



9613-1640-07

9611-1620-07 (× 2)

③

■ G-70 (on gear)

Gear set

9612-1645-07 (× 2) flexible PC board set.)

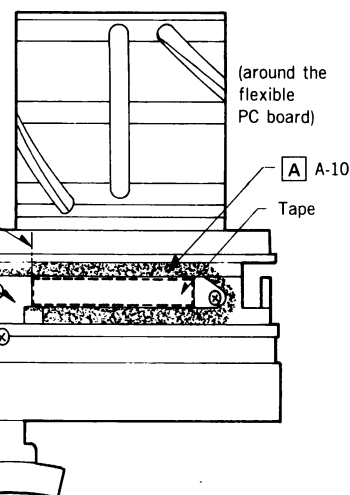
■ B-40 (on threaded part)

Flexible PC board

(See p. 14 for assembling flexible PC board set.)

■ Position of tape onto fixed barrel

■ Area of applying anti-diffusion agent



(around the flexible PC board)

■ A-10

Tape

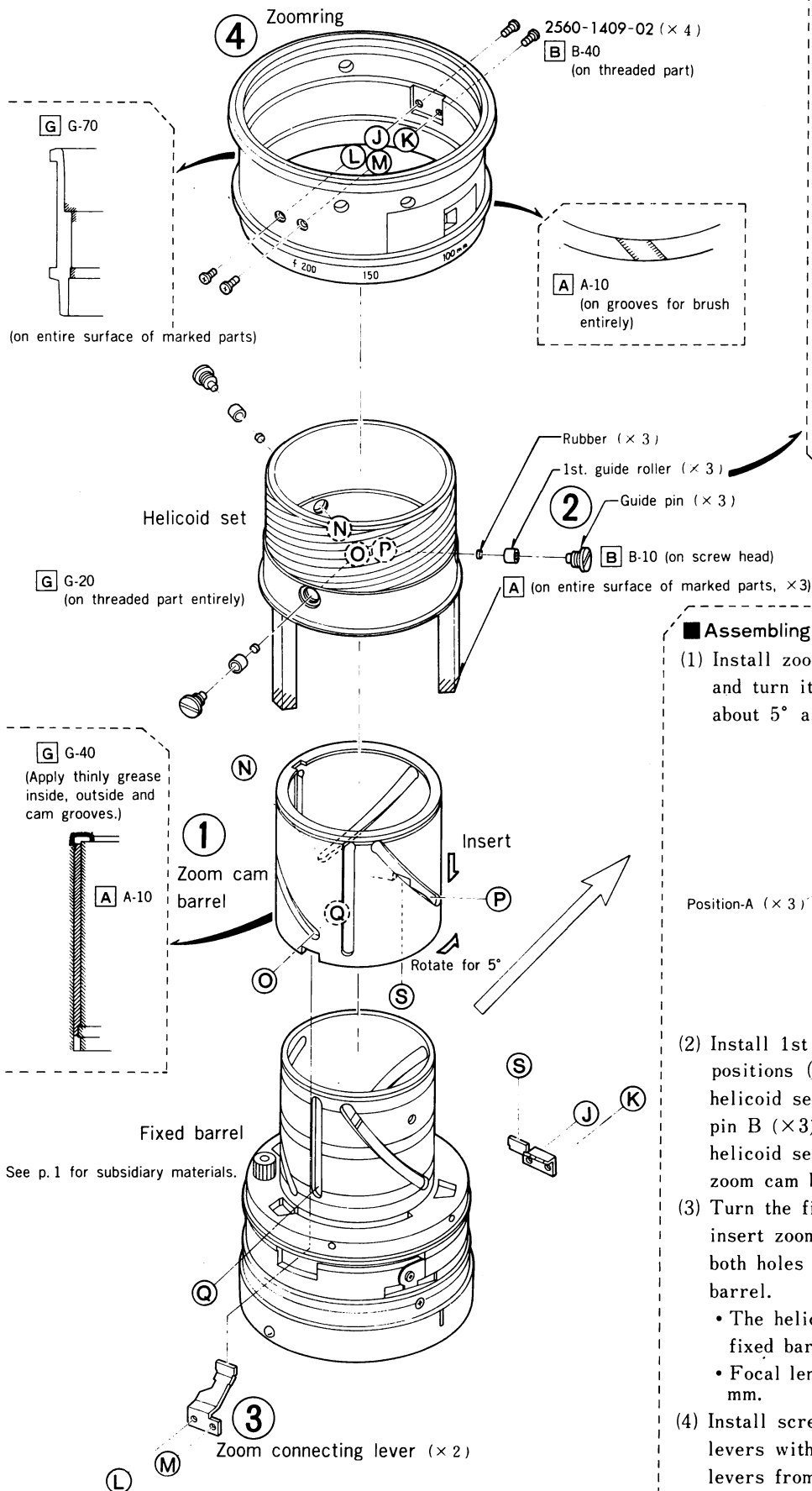
Edge

Flexible P.C board

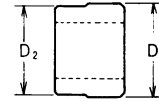
■ A-10 (on entire surface of marked parts)

2 Zoom cam barrel, Helicoid set, Zoom ring

■ Assemble the parts in the order of ①-④.



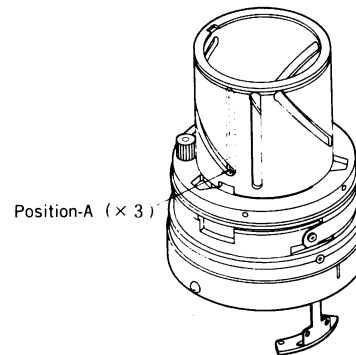
■ 1st guide rollers



2560-1471	D ₁ = φ3.63 D ₂ = φ3.53
2560-1472	D ₁ = φ3.63 D ₂ = φ3.52
2560-1473	D ₁ = φ3.63 D ₂ = φ3.51
2560-1474	D ₁ = φ3.62 D ₂ = φ3.53
2560-1475	D ₁ = φ3.62 D ₂ = φ3.52
2560-1476	D ₁ = φ3.62 D ₂ = φ3.51
2560-1477	D ₁ = φ3.61 D ₂ = φ3.53
2560-1478	D ₁ = φ3.61 D ₂ = φ3.52
2560-1479	D ₁ = φ3.61 D ₂ = φ3.51

■ Assembling procedure

- (1) Install zoom cam barrel on fixed barrel and turn it in the direction of arrow for about 5° as shown left.



- (2) Install 1st guide rollers (×3) to A positions (×3) as above. Then, put helicoid set on them and install guide pin B (×3). After installing, check helicoid set for functioning by rotating zoom cam barrel.
- (3) Turn the fixed barrel upside down and insert zoom connecting levers (×2) from both holes into the grooves of zoom cam barrel.
 - The helicoid set is fitted in with fixed barrel.
 - Focal length of zoom lens is set to 100 mm.
- (4) Install screws (×4) on zoom connecting levers with pressing the zoom connecting levers from inside.
 - Check zoom ring for functioning.

See p.1 for subsidiary materials.

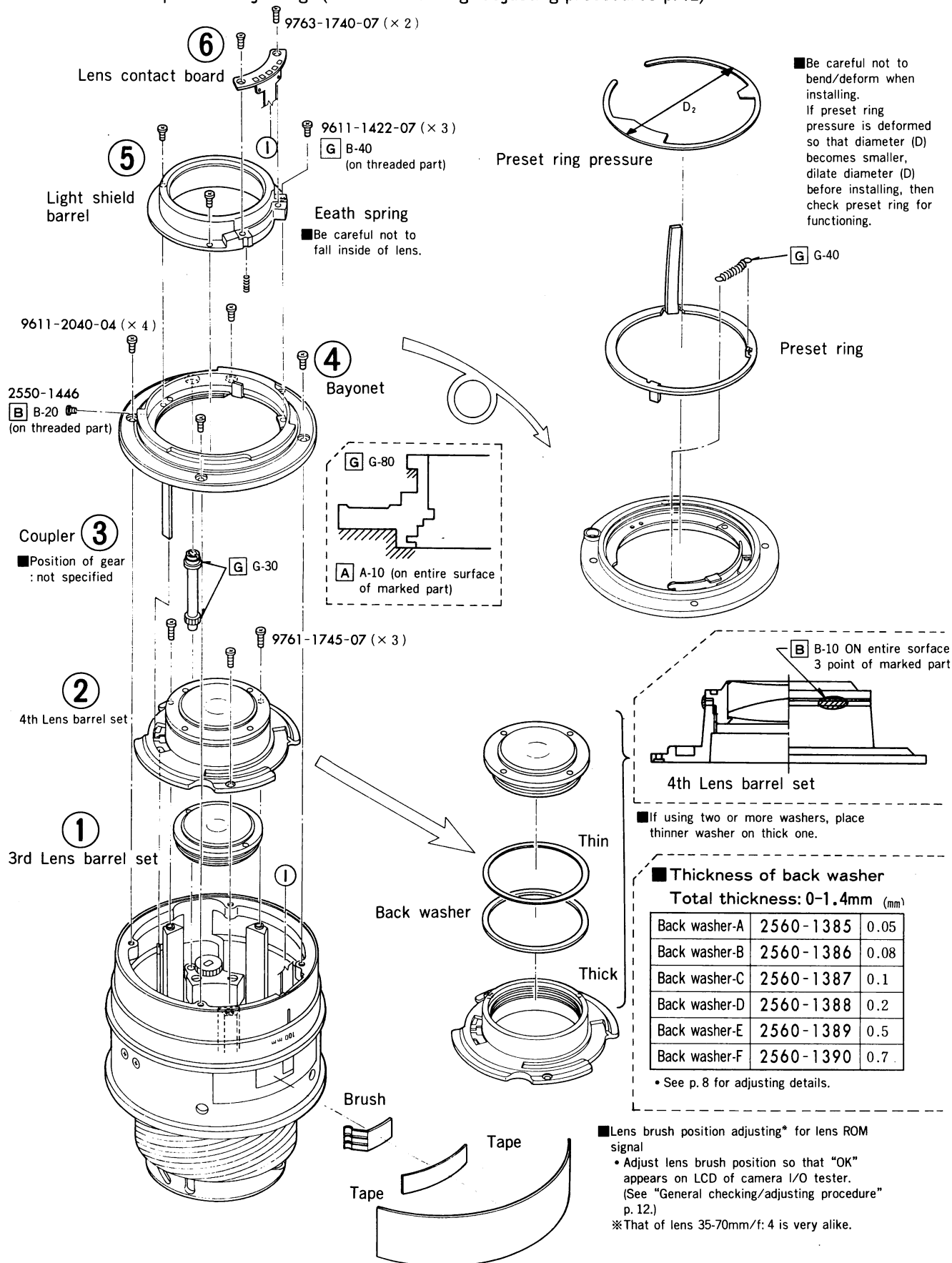
3 3rd and 4th lens groups, Bayonet mount, Light shield ring

■ Assemble the parts in the order of ①-⑥.

■ After assembling ⑥, perform the following adjustments and checkings. "Aperture diameter adjusting" (p. 8)

"Lens ROM signal checking" (General checking/adjusting procedure p. 14)

"Lens brush position adjusting" (General checking/adjusting procedures p. 12)



Aperture diameter adjusting

In this lens, diaphragm blades still remain in optical path regardless of full opening. Also, aperture diameter changes slightly by zooming operation. Therefore, adjust aperture diameter, following procedure below.

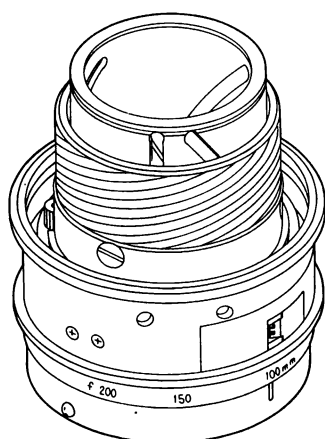
(After assembling is completed, check aperture diameter, following p.10)

■Exclusive tool : Aperture full-opening tool (2550-0110-75)

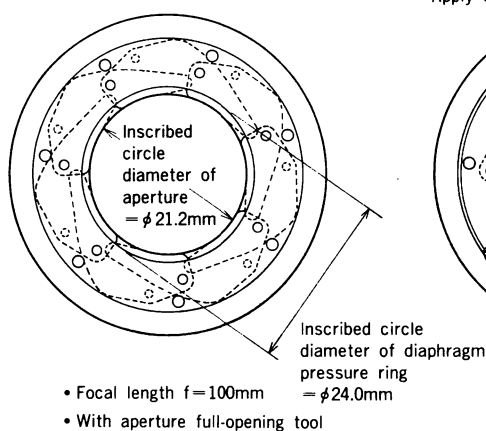
■Adjusting

1. Assemble lens, following ①-⑥ on p. 3. (See fig.1.)
2. Set focal length at $f=100\text{mm}$.
3. Set aperture full-opening tool to the lens in order to keep preset ring at full open position where preset ring touches bayonet mount.
4. Adjust inscribed circle diameter of aperture at 21.2mm , rotating diaphragm pressure ring. (See fig. 2.)
5. Apply bond on diaphragm pressure ring spring ($\times 3$). (See fig.3.)

■Fig. 1

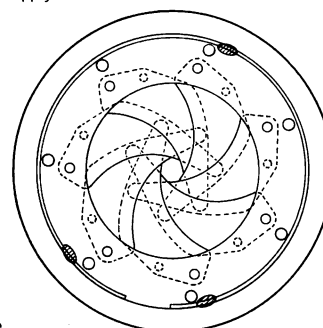


■Fig. 2



■Fig. 3

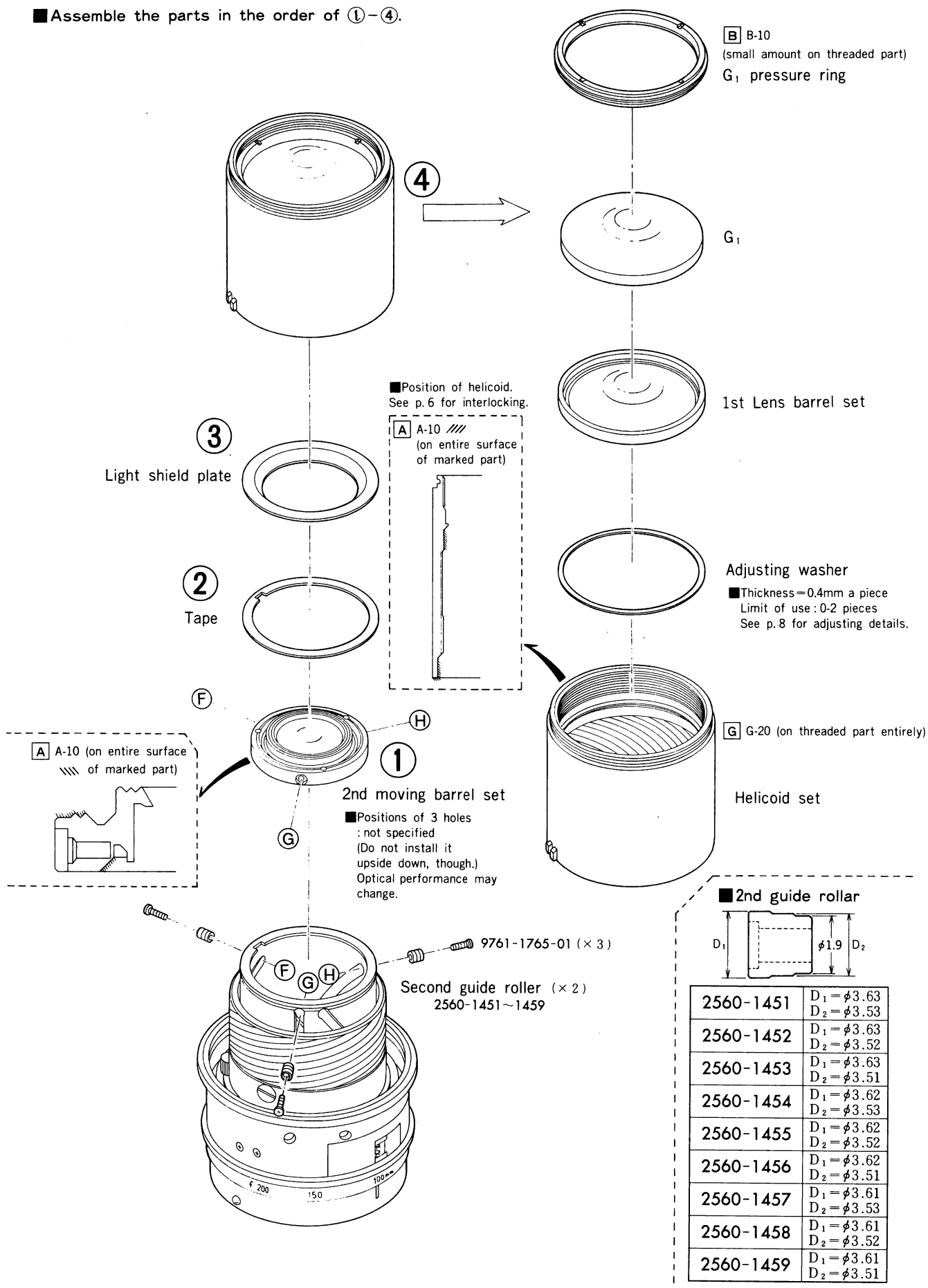
• Apply small amount of B-10 on marked (////) parts.



• Without aperture full-opening tool

4 1st and 2nd lens groups

■ Assemble the parts in the order of ①-④.



■ Helicoid position, level adjusting

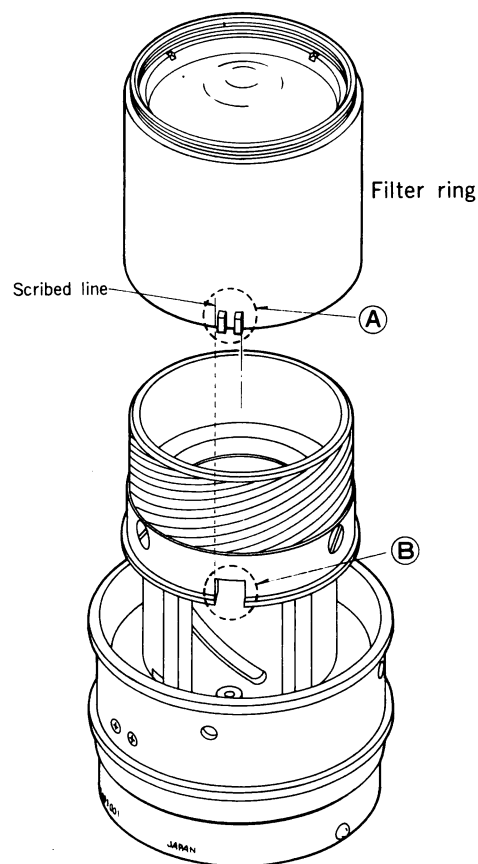
■ Interlocking position of helicoid

- INTERLOCK helicoid correctly, otherwise, focus shift adjusting cannot be performed later.

①Align the scribed line in ①A with edge of notch in ①B, then interlock them. (See fig. 1.)

If the scribed line is not visible, mark it when disassembling.

■ Fig. 1



■ Level adjusting of helicoid

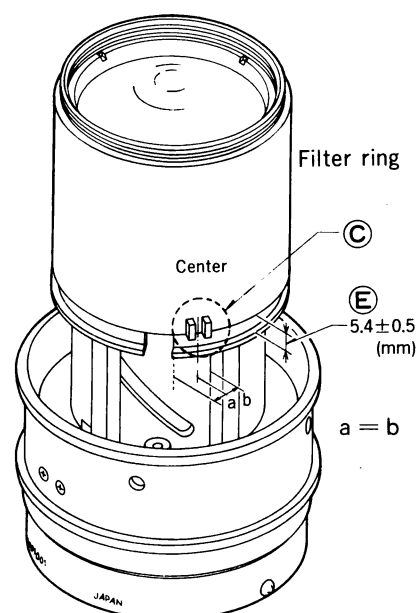
After interlocking as above, turn filter ring about a half rotation, and set ②C part (having no scribed line) as fig. 2, at infinity (∞) setting.

Make sure that the height ②E is 5.4 ± 0.5 mm.

If not, interlocking position is wrong so re-interlock as shown above.

If scribed line is not visible, the height ②E can be used as reference for assembling.

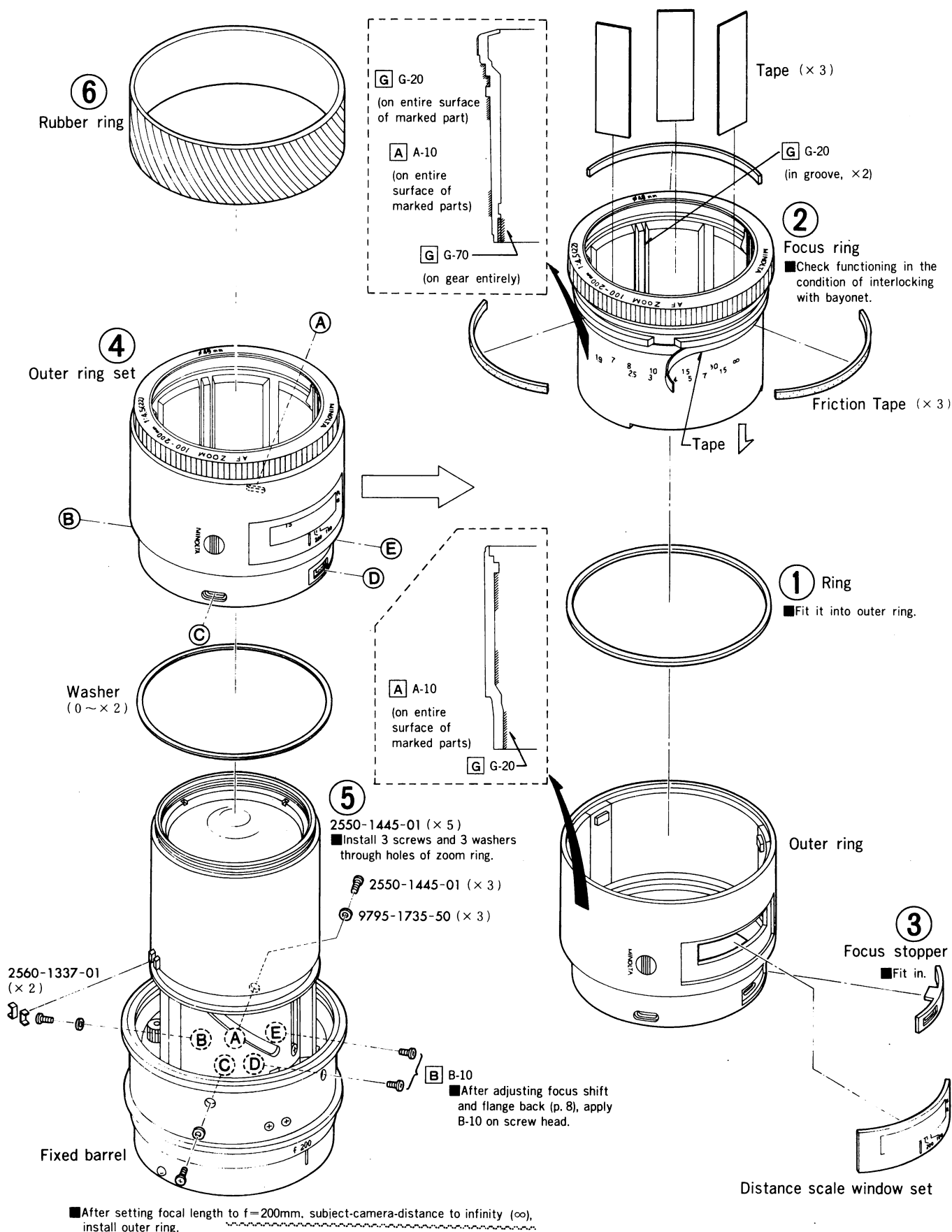
■ Fig. 2



5 Outer ring, Focusing ring, Rubber ring

■ Assemble the parts in the order of ①-⑥.

■ After assembling ⑤, perform the following adjustments and checkings "Focus shift/flange back adjustments" (on p. 8) "Aperture diameter checking" (on p. 10) "Projection resolving power checking" (on p. 10)



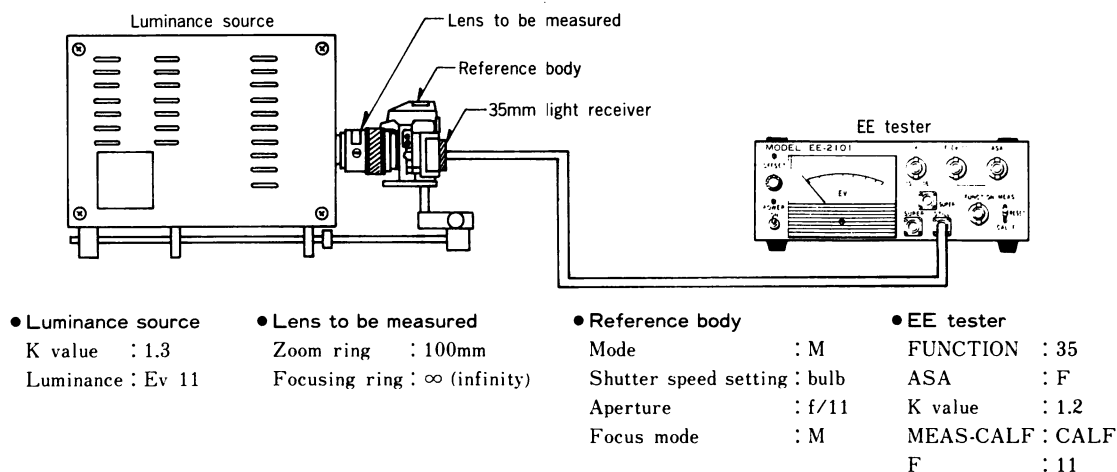
■ Aperture diameter checking

Since aperture diameter checking procedure of this model differs from one of regular A-lens, General checking/adjusting procedure is not usable. Therefore, check aperture diameter following procedure below.

- **Measuring instruments** : Luminance source (Model L-2101, L-222*, L-223*) ※Discontinued model
: EE tester (Model EE-2101, EE-2111)
: 35mm light receiver
: Reference body (Select, following General checking/adjusting procedure p. 9.)

■ Preparation

1. Set measuring instruments as below.



■ Checking procedures

1. Release the shutter several times and take the average of reading values.
2. Make sure that aperture diameter error, which is calculated as below, is within the allowable range.

$$\boxed{\text{Aperture diameter error}} = \boxed{\text{Average of reading values}} - \boxed{\text{Reference value}}$$

(Refer to General checking/adjusting procedure p. 9.)

Allowable range

0 ± 0.4 Ev

■ Projection resolving power checking, lens ROM signal checking

- Refer to General checking/adjusting procedure p. 6 in Service Manual No. 1.

Allowable range for Servicing (min.)

f (mm)	Distance D (m)	Center (y'=0)	y'=15	
			S	M
100	2.5~4.3	100	50	32
150	4.0~6.2	100	40	32
200	5.0~8.0	100	40	32

S : Sagittal image

M : Meridional image

- For checking lens ROM signal, see General checking/adjusting procedure p. 12, Service Manual No. 1.

[Caution]

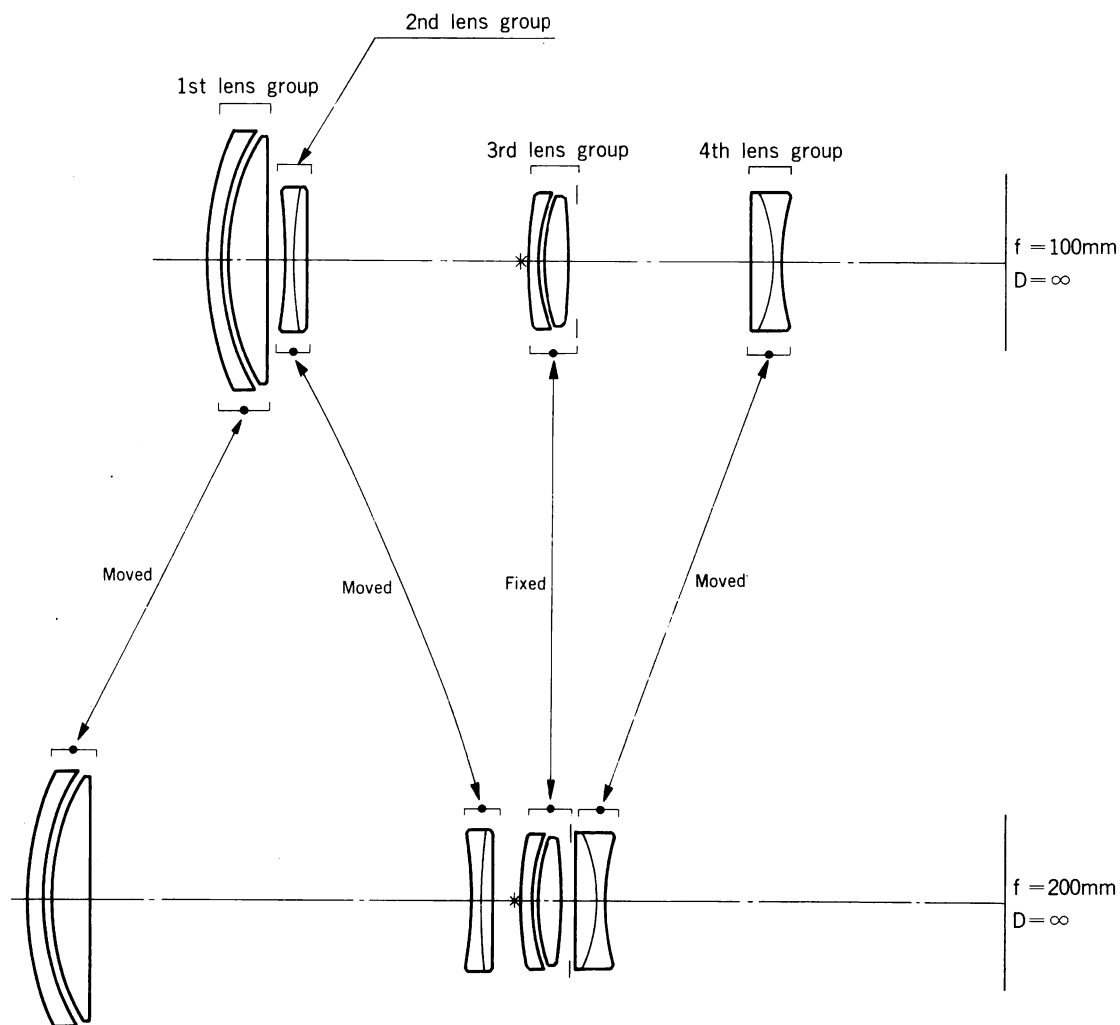
"Program pack Ver. 1.1" of camera I/O tester cannot be used for checking this lens.

■ Description of focusing and zooming

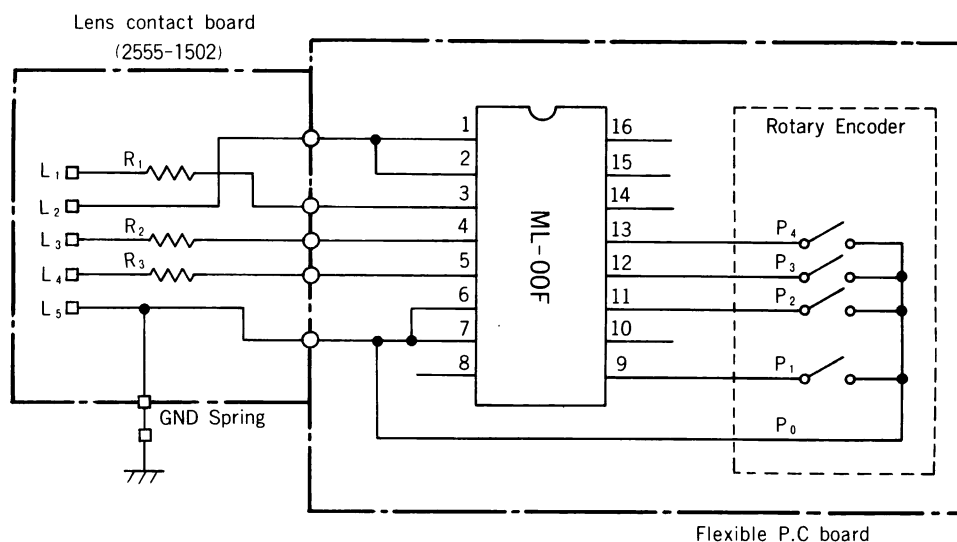
- 4-component mechanical-compensation zoom lens (positive, negative, positive, negative).

When zooming, by rotating zoom operation ring, 1st and 4th lens groups are moved together, 2nd lens group is moved individually, 3rd lens group is fixed.

- The diaphragm parts are fixed with 3rd lens group, and aperture diameter is changed slightly by zooming operation (the effective-full-aperture "f/4.5" does not change).
- When focusing, 1st lens group (focusing lens group) is moved by rotating AF coupler or focusing ring.



Substantial circuit diagram and printed wiring diagram



L₁₋₅ : Lens signal contact
R₁₋₃ : Printed resistor

ML-00F : ROM-IC
A-E : Soldering point
P₀₋₄ : Rotary encoder pattern switch
(ON/OFF at certain zooming point)

